

PATENT

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Applicant(s): Nagesh Kadaba
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AN ENVIRONMENTAL SENSOR

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Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT
37 C.F.R. § 1.121

Sir:

In response to the final Office Action dated April 4, 2006, please amend the above-identified application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 12 of this paper.

Amendments to the Claims: amendments to the claims are provided as indicated below.

1. **(Currently Amended)** A system for transporting a product via a carrier, the system comprising:

an environmental sensor physically associated with a product, the environmental sensor configured to record product environment data **as the environmental sensor travels with the product** during transport of the product through the carrier's logistics network;

at least one scanner for reading the product environment data from the sensor at one or more locations within the carrier's logistics network; and

a computer connected to communicate with the at least one scanner, the computer configured for:

determining, based on the product environment data, whether the environmental condition of the product has transcended a limit during transport;

routing the product through the carrier's logistics network to a first receiver so long as the determining has not established that the environmental condition has transcended the limit; and

rerouting the product through the carrier's logistics network to a second receiver, different from the first receiver, if the determining establishes that the environmental condition has transcended the limit;

[[wherein]] the environmental sensor associated with said product [[comprises]] **comprising a visual indicator activated automatically by the environmental sensor if the environmental sensor determines the environmental condition has transcended a limit for the product, the visual indicator visually alerting a handler that** [[for indicating to handlers of said product that the environmental condition of said product has transcended a limit and]] said product is to be rerouted to said second receiver, **the visual indicator alerting the handler by changing its visual appearance without requiring the handler to read data or text from the visual indicator to determine that the environmental condition has transcended the limit.**

2. **(Previously Presented)** A system as claimed in claim 1, wherein said rerouting comprises generating with the computer an updated transporting instruction that the computer transmits to at least one point within the carrier's logistics network for performance of transporting the product to said second receiver.

3. **(Previously Presented)** A system as claimed in claim 1, wherein the sensor stores shipping address data for said first receiver and said second receiver.

4. **(Previously Presented)** A system as claimed in claim 1, wherein the scanner is further used for scanning identification data associated with the product.

5. **(Original)** A system as claimed in claim 1, wherein the sensor generates time data and stores product environment data in association with the time data to indicate the time of sensing the environment condition.

6. **(Canceled)**

7. **(Previously Presented)** A system as claimed in claim 1, wherein the visual indicator comprises at least one light-emitting diode (LED) that illuminates in response to the environment condition to which the product is subjected transcending a limit.

8. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a radio-frequency identification (RFID) sensor tag, and the scanner transmits and receives radio frequency signals from the tag in the performance of scanning the sensor.

9. **(Canceled)**

10. **(Previously Presented)** A system as claimed in claim 1, wherein the sensor is affixed to an outer surface of a container used for holding the product during transport.

11. **(Previously Presented)** A system as claimed in claim 1, wherein the sensor is positioned on the product.

12. **(Original)** A system as claimed in claim 1, wherein the environmental condition sensed by the sensor to generate the product environment data includes at least one of temperature, pressure, vacuum, vibration, shock, humidity, moisture, light, air, and a chemical.

13. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a temperature sensor, and the product environment data generated by the sensor comprises at least one measurement of a temperature level to which the product has been exposed.

14. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a pressure sensor, and the product environment data generated by the pressure sensor comprises at least one measurement of a pressure level to which the product has been exposed.

15. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a vacuum sensor, and the product environment data generated by the vacuum sensor comprises at least one measurement of a vacuum level to which the product has been exposed.

16. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a light sensor, and the product environment data generated by the light sensor comprises at least one measurement of an amount of light to which the product has been exposed.

17. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a chemical sensor, and the product environment data generated by the chemical sensor comprises at least one measurement of an amount of a chemical to which the product has been exposed.

18. **(Original)** A system as claimed in claim 1, wherein the sensor comprises an air sensor, and the product environment data generated by the air sensor comprises at least one measurement of an amount of air to which the product has been exposed.

19. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a vibration sensor, and the product environment data generated by the vibration sensor comprises at least one measurement of an amount of vibration to which the product has been exposed.

20. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a shock sensor, and the product environment data generated by the shock sensor comprises at least one measurement of an amount of shock to which the product has been exposed.

21. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a humidity sensor, and the product environment data generated by the humidity sensor comprises at least one measurement of an amount of humidity to which the product has been exposed.

22. **(Original)** A system as claimed in claim 1, wherein the sensor comprises a moisture sensor, and the product environment data generated by the moisture sensor comprises at least one measurement of an amount of moisture to which the product has been exposed.

23 – 25. **(Canceled)**

26. **(Previously Presented)** A system as claimed in claim 1, wherein said computer is further configured for:

receiving the product environment data in association with product identification data;

storing the product environment data in association with the product identification data in a database;

receiving tracking data in association with the product identification data, the tracking data identifying when and where at least one scanning of the product was performed within the carrier's logistics network; and

storing the tracking data in association with the product identification data and the product environment data in said database.

27. **(Canceled)**

28. **(Currently Amended)** The system as claimed in claim 26, wherein the product identification data comprises a tracking identifier for uniquely identifying the product within the carrier's logistics network.

29. **(Currently Amended)** A method of transporting a product via a carrier, the method comprising:

physically associating an environmental sensor with the product **so that the environmental sensor travels with the product during transport by the carrier;**

reading product environment data from the environmental sensor at a location within the carrier's logistics network, the product environment data having been recorded by the environmental sensor during transport;

determining, based on the product environment data, whether the environmental condition of the product has transcended a limit during transport;

routing the product through the carrier's logistics network to a first receiver so long as the determining has not established that the environmental condition has transcended the limit; and

rerouting the product through the carrier's logistics network to a second receiver, different from the first receiver, if the determining establishes that the environmental condition has transcended the limit,

[[wherein]] the environmental sensor associated with said product [[comprises]] **comprising a visual indicator activated automatically by the environmental sensor if the environmental sensor determines the environmental condition has transcended the limit for**

the product, the visual indicator alerting a handler that [[for indicating to handlers of said product that the environmental condition of said product has transcended a limit and]] said product is to be rerouted to said second receiver, **the visual indicator alerting the handler by changing its visual appearance without requiring the handler to read data or text from the visual indicator to determine that the environmental condition has transcended the limit.**

30. **(Previously Presented)** A method as claimed in claim 29, wherein said rerouting comprises generating with a computer system an updated transporting instruction that the computer system transmits to at least one point within the carrier's logistics network for performance of transporting the product to said second receiver.

31. **(Previously Presented)** A method as claimed in claim 29, wherein a shipping label associated with the product includes shipping address data indicating a shipping address of said first receiver.

32. **(Previously Presented)** A method as claimed in claim 29, wherein the sensor stores shipping address data for said first receiver and said second receiver.

33 – 42. **(Canceled)**

43. **(Previously Presented)** A method as claimed in claim 29, wherein the determining is performed by the sensor to produce determination data that is captured during said reading step.

44. **(Previously Presented)** A method as claimed in claim 29, wherein the sensor generates time data and stores product environment data in association with the time data to indicate the time of sensing the environmental condition.

45. **(Canceled)**

46. **(Previously Presented)** A method as claimed in claim 29, wherein the visual indicator comprises at least one light-emitting diode (LED) that illuminates in response to the environment condition to which the product is subjected transcending the limit.

47 – 48. **(Canceled)**

49. **(Previously Presented)** A method as claimed in claim 29, wherein the sensor comprises a radio-frequency identification (RFID) sensor tag, and a scanner performs said reading step by transmitting and receiving radio frequency signals from the tag.

50. **(Canceled)**

51. **(Previously Presented)** A method as claimed in claim 29, wherein the sensor is affixed to an outer surface of a container used for holding the product during transport.

52. **(Canceled)**

53. **(Original)** A method as claimed in claim 29, wherein the environmental condition sensed by the sensor to generate the product environment data includes at least one of temperature, pressure, vacuum, vibration, shock, humidity, moisture, light, air, and a chemical.

54. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a temperature sensor, and the product environment data generated by the temperature sensor comprises at least one measurement of a temperature level to which the product has been exposed.

55. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a pressure sensor, and the product environment data generated by the pressure sensor comprises at least one measurement of a pressure level to which the product has been exposed.

56. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a vacuum sensor, and the product environment data generated by the vacuum sensor comprises at least one measurement of a vacuum level to which the product has been exposed.

57. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a light sensor, and the product environment data generated by the light sensor comprises at least one measurement of an amount of light to which the product has been exposed.

58. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a chemical sensor, and the product environment data generated by the chemical sensor comprises at least one measurement of an amount of a known chemical to which the product has been exposed.

59. **(Original)** A method as claimed in claim 29, wherein the sensor comprises an air sensor, and the product environment data generated by the air sensor comprises at least one measurement of an amount of air to which the product has been exposed.

60. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a vibration sensor, and the product environment data generated by the vibration sensor comprises at least one measurement of an amount of vibration to which the product has been exposed.

61. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a shock sensor, and the product environment data generated by the shock sensor comprises at least one measurement of an amount of shock to which the product has been exposed.

62. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a humidity sensor, and the product environment data generated by the humidity sensor comprises at least one measurement of an amount of humidity to which the product has been exposed.

63. **(Original)** A method as claimed in claim 29, wherein the sensor comprises a moisture sensor, and the product environment data generated by the moisture sensor comprises at least one measurement of an amount of moisture to which the product has been exposed.

64 – 89. **(Canceled)**

90. **(Previously Presented)** The method of Claim 29, wherein said visual indicator comprises a sensor strip that changes color in response to the environmental condition of said product transcending a limit.

91. **(Previously Presented)** The method of Claim 90, wherein the sensor strip comprises a paper thermometer or liquid crystal temperature strip that changes color in response to a change in temperature.

92. **(Previously Presented)** The method of Claim 90, wherein the sensor strip comprises an electrochemical sensor strip that changes color in response to the presence of a chemical.

93. **(Previously Presented)** The system of Claim 1, wherein said visual indicator comprises a sensor strip that changes color in response to the environmental condition of said product transcending a limit.

94. **(Previously Presented)** The system of Claim 93, wherein the sensor strip comprises a paper thermometer or liquid crystal temperature strip that changes color in response to a change in temperature.

95. **(Previously Presented)** The system of Claim 93, wherein the sensor strip comprises an electrochemical sensor strip that changes color in response to the presence of a chemical.

REMARKS

This Amendment is responsive to the Office action dated April 4, 2006.

In the Office action, Claims 1-5, 7, 8, 10-22, 26, 28-32, 43, 44, 46, 49, 51, 53-63, and 90-95 were rejected. By the present Amendment, Claims 1 and 29 have been amended. Accordingly, Claims 1-5, 7, 8, 10-22, 26, 28-32, 43, 44, 46, 49, 51, 53-63, and 90-95 remain pending in the application.

The rejections are addressed separately below.

Rejection of Claims 1-5, 7-8, 10-12, 14-22, 26, 28-32, 43-44, 46, 49, 51, 53, 55-63, 90, 92-93 and 95 under 35 U.S.C. 102(e) based on the Published Application of *Gui* (U.S. Pub. No. 2004/0024644 A1)

On Page 2 of the Office action, Claims 1-5, 7-8, 10-12, 14-22, 26, 28-32, 43-44, 46, 49, 51, 53, 55-63, 90, 92-93, and 95 were rejected under 35 U.S.C. 102(e) based on *Gui* (U.S. Pub. No. 2004/0024644 A1). *Gui* and the reasons that Claims 1-5, 7-8, 10-12, 14-22, 26, 28-32, 43-44, 46, 49, 51, 53, 55-63, 90, 92-93, and 95 are patentable over *Gui* are addressed below.

A. Legal Standards Regarding Anticipation under 35 U.S.C. 102

Anticipation under 35 U.S.C. §102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference. *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990). See MPEP 2131; *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the language of 35 U.S.C. 102 stating "A person shall be entitled to a patent unless-..." has been interpreted as putting the burden on the Examiner to establish a *prima facie* case of anticipation. *In re Gene R. Wilder*, 429 F.2d 447, 450 (CCPA 1970). "Only if this burden is met does the burden of coming forward with rebuttal argument or evidence shift to the applicant." *In re Rijckaert*, 9 F.3d 1531, 1532 (Fed. Cir. 1993).

B. *Gui* (U.S. Pub. No. 2004/0024644 A1)

Gui discloses an intelligent sensor device 1000 which includes a sensor element 1018 and a corresponding actuator element 1020 (paragraph [0087]). Sensor element 1018 and actuator element 1020 may be configured to provide status and history of an asset's shipping and operation conditions, which can be stored in memory 1008 for subsequent transmission by the RF transceiver 1012 (paragraph [0087]). The sensing device 1000 may be configured to include various types of sensors for monitoring and recording shipping and operating conditions, including collision, vibration, speed, force/pressure, tilt, tamper, levels, weight, photo-sensitive vision, global positioning satellite (GPS) (paragraph [0087]). *Gui* does not disclose use of a temperature sensor. *Gui* mentions that with any combination of sensors a more accurate information of an asset's location or operating conditions/history may be made available to system users (paragraph [0089]). This information may be displayed on the device's visual display 1016 and used by the receiver of the asset to either accept or reject the asset (paragraph [0096]). As to what happens after acceptance or rejection, *Gui* is entirely silent.

B. Claims 1-5, 7-8, 10-12, 14-22, 26, 28-32, 43-44, 46, 49, 51, 53, 55-63, 90, 92-93 and 95 are Patentable over *Gui*

In contrast, Claim 1 recites an environmental sensor physically associated with a product, a scanner for reading product environment data from the sensor at one or more locations within the carrier's logistics network, and a computer connected to communicate with the scanner. Claim 1 further recites as follows:

...the computer configured for:

determining, based on the product environment data, whether the environmental condition experienced by the product has transcended a limit during transport;

routing the product through the carrier's logistics network to a first receiver so long as the determining has not established that the environmental condition has transcended the limit; and

rerouting the product through the carrier's logistics network to a second receiver, different from the first receiver, if the determining establishes that the environmental condition has transcended the limit.

Although *Gui* mentions that the receiver can review information collected by the asset management device during transit to determine whether to accept or reject an asset, the receiver

in *Gui* is a human user. In contrast, in Claim 1, the computer determines whether a limit is transcended. In addition, the steps of routing to a first receiver if the limit has not been transcended, and rerouting to a second receiver if the limit has been transcended, are steps that are not disclosed in *Gui*. Since the asset has already arrived at the receiver in *Gui* when the determination is made to accept or reject, *Gui* does not disclose routing or rerouting steps based on whether a limit has been transcended which occur in the carrier's logistics network *before* the first or second receiver receives the product. Thus, *Gui* fails to disclose at least the computer recited in Claim 1 as amended.

Moreover, Claim 1 has been amended to recite:

...the environmental sensor associated with said product **comprising a visual indicator activated automatically by the environmental sensor if the environmental sensor determines the environmental condition has transcended a limit for the product, the visual indicator visually alerting a handler that** said product is to be rerouted to said second receiver, **the visual indicator alerting the handler by changing its visual appearance without requiring the handler to read data or text from the visual indicator to determine that the environmental condition has transcended the limit.**

In contrast, the intelligent sensing device 1000 of *Gui* provides status and history of an asset's shipping and operation conditions, and it has a visual display 1016 for enabling the device to indicate current status or other information visually. The device 1000 does not appear to be mentioned in *Gui* as itself capable of determining that an environmental condition has transcended a limit, let alone generating a visual alert to indicate that such limit has been transcended in a manner that can draw the attention of a handler in a carrier's logistics network. The Office action relies on Claim 9 of *Gui* which mentions that "...the radio frequency transceiver operates to transmit information in response determined threshold levels regarding information measured by the sensor element, processed by the processing unit, and stored in the memory." What this statement means is not clearly set forth in *Gui*. "Response determined threshold levels" appear to be threshold levels determined by a response from some unspecified device or person. Or, if the intended language was "in response **to** determined threshold levels," there is no indication in *Gui* of what determines the threshold levels, and the threshold levels

could be related to reaching an amount or level of data as opposed to some measured signal level from the sensor element. Furthermore, the limitation states that the transceiver transmits information, not that the sensor element generates a visual alert for a handler as does the environmental sensor of Claim 1. There is no indication that the device 1000 of *Gui* activates a visual indicator to generate a visual alert based on a determination that a limit has been transcended, without requiring the user to read text or data from a visual display. Accordingly, Applicant submits that Claim 1 as amended is patentable over *Gui*.

Claims 2-5, 7-8, 10-12, 14-22, 26, 28, 93 and 95 depend from Claim 1 as amended and include all limitations of that Claim plus additional limitations that are not taught or even suggested by *Gui*. For example, Claim 2 recites "wherein said rerouting comprises generating with the computer an updated transporting instruction that the computer transmits to at least one point within the carrier's logistics network for performance of transporting the product to said second receiver." This feature is not disclosed in *Gui* - paragraph [0069] does not mention anything regarding rerouting of a product. Claim 3 recites "wherein the sensor stores shipping address data for said first receiver and said second receiver." This feature is not disclosed in *Gui* as paragraph [0033] does not mention anything about storing shipping address data for first and second receivers in the environmental sensor. Claim 5 recites "wherein the sensor generates time data and stores product environment data in association with the time data to indicate the time of sensing the environment condition." Paragraph [0079] of *Gui* discloses time stamping the tag with the date and time the tag was detected. It does not disclose storing product environment data in correspondence with the time of sensing the environmental condition. Claim 7 recites "wherein the visual indicator comprises at least one light-emitting diode (LED) that illuminates in response to the environment condition to which the product is subjected transcending a limit." *Gui* discloses no LED that illuminates in response to the environment condition to which the product is subjected transcending a limit. The visual display 1016 of *Gui* is a textual display whereas the claimed LED is designed to draw the attention of a handler to the fact that the environmental sensor has determined that a limit for an environmental condition has been transcended. Accordingly, *Gui* fails to disclose the LED of Claim 7. *Gui* fails to disclose a vacuum sensor (Claim 15), air sensor (Claim 18), humidity sensor (Claim 21), or moisture sensor

(Claim 22). Paragraph [0088] of *Gui* fails to disclose any such sensors. Claim 26 discloses a computer configured for “receiving the product environment data in association with product identification data; storing the product environment data in association with the product identification data in a database; receiving tracking data in association with the product identification data, the tracking data identifying when and where at least one scanning of the product was performed within the carrier’s logistics network; and storing the tracking data in association with the product identification data and the product environment data in said database.” *Gui* fails to disclose a computer that stores tracking data in association with product identification data and product environment data. Thus, Claim 26 is patentable over *Gui*. Claim 93 recites “wherein said visual indicator comprises a sensor strip that changes color in response to the environmental condition of said product transcending a limit.” *Gui* discloses no such sensor strip that changes color in response to the environmental condition of a product transcending a limit. Claim 95 recites “wherein the sensor strip comprises an electrochemical sensor strip that changes color in response to the presence of a chemical.” *Gui* discloses no such electrochemical sensor strip that changes color in the presence of a chemical. Thus, for these reasons as well as for the reasons stated above with respect to Claim 1 as amended, Claims 2-5, 7-8, 10-12, 14-22, 26, 28, 93 and 95 as amended are patentable over *Gui*.

Claim 29 recites the following steps:

...determining, based on the product environment data, whether the environmental condition of the product has transcended a limit during transport;
routing the product through the carrier’s logistics network to a first receiver so long as the determining has not established that the environmental condition has transcended the limit; and
rerouting the product through the carrier’s logistics network to a second receiver, different from the first receiver, if the determining establishes that the environmental condition has transcended the limit...

Although *Gui* mentions that the receiver can review information collected by the asset management device during transit to determine whether to accept or reject an asset, the receiver in *Gui* makes this determination after the asset has been transported to the receiver. In contrast, the determining step of Claim 29 is performed during transport *before* it is received by the receiver. In addition, the steps of routing to a first receiver if the limit has not been transcended,

and rerouting to a second receiver if the limit has been transcended, are steps that are not disclosed in *Gui*. Since the asset has already arrived at the receiver in *Gui* when the determination is made to accept or reject, *Gui* does not disclose routing or rerouting steps based on whether a limit has been transcended which occur in the carrier's logistics network *before* the first or second receiver receives the product. Thus, *Gui* fails to disclose at least the computer recited in Claim 1 as amended.

Moreover, Claim 29 has been amended to recite:

the environmental sensor associated with said product **comprising a visual indicator activated automatically by the environmental sensor if the environmental sensor determines the environmental condition has transcended the limit for the product, the visual indicator alerting a handler that** said product is to be rerouted to said second receiver, **the visual indicator alerting the handler by changing its visual appearance without requiring the handler to read data or text from the visual indicator to determine that the environmental condition has transcended the limit.**

In contrast, the intelligent sensing device 1000 of *Gui* provides status and history of an asset's shipping and operation conditions, and it has a visual display 1016 for enabling the device to indicate current status or other information visually. The device 1000 is not mentioned in *Gui* as itself capable of determining that an environmental condition has transcended a limit, let alone generating a visual alert to indicate that such limit has been transcended in a manner that can attract the attention of a handler within a carrier's logistics network. The Office action relies on Claim 9 of *Gui* which mentions that "...the radio frequency transceiver operates to transmit information in response determined threshold levels regarding information measured by the sensor element, processed by the processing unit, and stored in the memory." What this statement means is not clearly set forth in *Gui*, but it is clear that the device 1000 of *Gui* does not determine whether an environmental condition has transcended a limit as recited in Claim 1 as amended. Further, there is no indication that the device 1000 of *Gui* activates a visual indicator to generate a visual alert based on a determination that a limit has been transcended, without requiring the user to read text or data from a visual display, in a manner that can attract the

attention of a handler in a carrier's logistics network. Accordingly, Applicant submits that Claim 1 as amended is patentable over *Gui*.

Claims 30-32, 43, 44, 46, 49, 51, 53, 55-63, 90 and 92 depend, directly or indirectly, from Claim 29 and include all of the limitations of that Claim plus additional limitations that are not taught or even suggested by *Gui*. Claim 30 recites "wherein said rerouting comprises generating with a computer system an updated transporting instruction that the computer system transmits to at least one point within the carrier's logistics network for performance of transporting the product to said second receiver." This feature is not disclosed in *Gui* - paragraph [0069] does not mention anything regarding rerouting of a product. Claim 31 recites "wherein a shipping label associated with the product includes shipping address data indicating a shipping address of said first receiver." Paragraph [0033] does not mention any shipping label bearing the address of the first receiver. Claim 32 recites "wherein the sensor stores shipping address data for said first receiver and said second receiver." This feature is not disclosed in *Gui* as paragraph [0033] does not mention storing first or second addresses in the environmental sensor. Claim 43 recites "wherein the determining is performed by the sensor to produce determination data that is captured during said reading step." Claim 9 of *Gui* states "...the radio frequency transceiver operates to transmit information in response determined threshold levels regarding information measured by the sensor element, processed by the processing unit, and stored in the memory." What this statement means is not clearly set forth in *Gui*. Nonetheless, it is clear that the device 1000 of *Gui* does not perform the recited determining to produce determination data that is captured during the reading step as recited in Claim 43. Instead, the *Gui* device only *transmits* information "in response determined threshold levels regarding information measured by the sensor element, processed by the processing unit, and stored in the memory." Claim 44 recites "wherein the sensor generates time data and stores product environment data in association with the time data to indicate the time of sensing the environmental condition." Paragraph [0079] mentions timestamping with the time at which the tag was scanned by a handheld device. It does not mention that the sensor generates time data and stores product environment data in association with the time data as recited in Claim 44. Claim 46 recites "wherein the visual indicator comprises at least one light-emitting diode (LED) that illuminates in response to the

environment condition to which the product is subjected transcending the limit.” Although *Gui* discloses a visual display 1016, it is a text or data display only and is not designed to draw the attention of a handler as would an LED. *Gui* fails to disclose a vacuum sensor (Claim 56), an air sensor (Claim 59), a humidity sensor (Claim 62), or a moisture sensor (Claim 63). Furthermore, Claim 90 recites that “...the visual indicator comprises a sensor strip that changes color in response to the environmental condition of said product transcending a limit.” *Gui* discloses no such sensor strip that changes color in response to the environmental condition of the product transcending a limit. Furthermore, Claim 91 recites “wherein the sensor strip comprises a paper thermometer or liquid crystal temperature strip that changes color in response to a change in temperature.” *Gui* discloses no such paper thermometer or liquid crystal temperature strip that changes color in response to temperature change. Claim 92 recites “wherein the sensor strip comprises an electrochemical sensor strip that changes color in response to the presence of a chemical.” *Gui* discloses no such electrochemical sensor strip that changes color in response to the presence of a chemical. Thus, for these reasons as well as for the reasons stated above with respect to independent Claim 29, Claims 30-32, 43, 44, 46, 49, 51, 53, 55-63, 90 and 92 are patentable over *Gui*.

Rejection of Claims 13, 54, 91 and 94 under 35 U.S.C. 103(a) based on the combination of *Gui* in view of *West* (U.S. Patent No. 5,936,523)

On page 12 of the Office action, Claims 13, 54, 91 and 94 were rejected under 35 U.S.C. 103(a) based on the combination of *Gui* in view of *West* (U.S. Patent No. 5,936,523). The *West* patent and the reasons that Claims 13, 54, 91 and 94 are patentable over the combination of *Gui* in view of *West* are addressed below.

A. Standards for Obviousness under 35 U.S.C. 103(a)

The determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *In re Dembiczak*, 175 F.2d 994, 998 (Fed. Cir. 1999) (citing *Graham v. John Deere, Inc.*, 383 U.S. 1, 17-18, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 U.S.P.Q. 459, 465 (1966)). The Examiner has the burden of establishing a prima facie case of

obviousness under 35 U.S.C. §103(a). *Ex Parte Martin P. Hageman and Thomas J. Palus*, Appeal No. 2000-1514, Application No. 09/038,450 (citing *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993)); *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only if the Examiner satisfies this initial burden does the burden of coming forward with evidence shift to the Appellant. *Id.* The Examiner can satisfy this burden by showing some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. *In re Fine*, 87 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

A *prima facie* case of obviousness requires: (1) a suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings; (2) a reasonable expectation of success; and (3) the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *In re Fine*, 87 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); MPEP § 2142, 8th Ed., Rev. 4. The teaching, suggestion, or motivation to modify or combine features in an effort to obtain the claimed invention must be "clear and particular." *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).

B. The West Patent (U.S. Patent No. 5,936,523)

The *West* patent discloses a device for placing inside a package or other enclosure to detect unwanted disposition of its contents. Environmental conditions indicative of an unwanted disposition include exposure of the package contents to excessive heat or cold. Abstract; Fig. 3; col. 8, line 56 through col. 9, line 54. A specific embodiment of the device with a thermal sensor 113 is shown in Fig. 3. The output of a thermal sensor 113 is sent to reporting unit 130 which compares it to a threshold value for the highest limit of acceptable temperature. If excessive temperature is encountered, reporting unit 130 creates a record that is stored in information storage unit 140. Retrieval unit 150 retrieves information from information storage unit 140

without need for an interrogation command. The information is sent to a compact LCD readout 163 which is a “tiny four-digit readout, much smaller than a wristwatch face [which] is used to alternatively display the maximum temperature encountered and the total number of minutes in which excessive temperatures were encountered.”

C. Claims 13, 54, 91, 94 Are Patentable over the Combination of *Gui* in view of *West*

There is no suggestion or teaching in *Gui* or *West*, or in the prior art in general, that would have led a person of ordinary skill in the art to combine them as done in the Office action, nor would there have been any reasonable expectation of success in making the combination. Other than through applicant’s disclosure, there is simply no teaching or suggestion in the prior art that would have led such person to combine, modify or replace the device 1000 of *Gui* to include the thermal sensor 113 of *West*’s device. This is impermissible hindsight that is prohibited in the obviousness analysis. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *In re Fine*, 87 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); MPEP § 2142, 8th Ed., Rev. 4. Accordingly, no *prima facie* case of obviousness has been established.

In addition, one of ordinary skill in the art would not have been motivated to combine *Gui* and *West* because in *Gui* the human receiver determines whether to accept or reject an asset based on information displayed on the device’s visual display 1016 whereas in *West* it is the sensor device itself that determines that a signal from the thermal sensor 113 exceeds a temperature value threshold level. One of ordinary skill in the art would have considered it redundant to combine *Gui* and *West* absent the teachings claimed in the subject application, namely, routing or rerouting the product dependent upon whether the limit for an environmental condition has been transcended, and a visual indicator to alert a handler that a product must be rerouted. Thus, one of ordinary skill in the art would not have been motivated to combine *Gui* and *West* in the absence of Applicant’s disclosure.

In addition, Claims 13 and 94 depend from Claim 1 as amended, and Claims 54 and 91 depend from Claim 29 as amended. As noted above, it is necessary in an obviousness rejection to show that each and every element of the claimed invention is disclosed or suggested in the combination. *West* fails to disclose the deficiencies of *Gui* as explained above with respect to Claims 1 and 29, namely, it discloses no computer for determining whether a limit has been

transcended, and routing or rerouting based on that determination. Similarly with respect to method Claim 29, *West* discloses no determining whether a limit has been transcended, and routing or rerouting a product based on that determination. Therefore, Claims 13, 54, 91, and 94 are patentable over the prior art for similar reasons to those stated above with respect to the rejection of Claims 1 and 29 under 35 U.S.C. 102(e).

Furthermore, Claims 13 and 54 recite “wherein the sensor comprises a temperature sensor, and the product environment data generated by the sensor comprises at least one measurement of a temperature level to which the product has been exposed.” The Examiner correctly notes that *Gui* fails to disclose any temperature sensor, and as explained above, there is no motivation in the prior art to combine *Gui* with *West* in an attempt to obtain the claimed invention.

Claims 54 and 91 recite “wherein the sensor strip comprises a paper thermometer or liquid crystal temperature strip that changes color in response to a change in temperature.” Neither *Gui* nor *West* disclose a sensor strip comprised of a paper thermometer or a liquid crystal temperature strip that changes color in response to a change in temperature. A color change indicated by the sensor strip can be used to rapidly impart to a handler the fact that an environmental condition affecting a product under shipment has transcended a limit, and that the package must be rerouted to a second receiver. Neither *Gui* nor *West* disclose such a temperature sensor strip that changes color in this way, which more quickly indicates to a handler that a product must be handled differently than otherwise.

Conclusion

In view of the remarks presented above, it is respectfully submitted that Claims 1-5, 7, 8, 10-22, 26, 28-32, 43, 44, 46, 49, 51, 53-63, and 90-95 of the application are now in condition for allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicant's undersigned attorney at (404) 881-4583 to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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